

IN THE CLAIMS

Please enter the following amendments to the claims:

Claims 1-23 (Canceled).

24. (New) An apparatus for discovering a powerability condition of a computer network, comprising:
- a signal generator configured to provide a test signal to differential signal lines of a connecting medium of the computer network; and
  - a detector configured to measure a response signal from the differential signal lines of the connecting medium of the computer network to enable the apparatus to indicate whether a remotely powerable device connects to the connecting medium of the computer network based on the response signal;
- wherein the signal generator, when providing the test signal, is configured to supply to the connecting medium, (i) a first voltage during a first time period, and (ii) a second voltage that is substantially different than the first voltage during a second time period; and
- wherein the signal generator is configured to apply one of a positive and negative test voltage to the connecting medium as the first voltage, and the other of the positive and negative test voltage to the connecting medium as the second voltage.
25. (New) The apparatus of claim 24 wherein the computer network supports connection of a remotely powerable device that receives, during normal operation, an operating voltage having a first voltage magnitude; and wherein the signal generator is configured to supply, as the test signal, a test voltage having a second voltage magnitude that is substantially less than the first voltage magnitude.

26. (New) The apparatus of claim 24 wherein the connecting medium includes a local end and a remote end, and wherein operation of the apparatus selectively identifies, through the local end of the connecting medium, one of (i) a backwards wired device condition at the remote end, (ii) an open condition at the remote end, (iii) a remotely powerable device condition at the remote end, and (iv) a shorted/non-powerable device condition at the remote end.
27. (New) The apparatus of claim 24 wherein the differential signal lines of the connecting medium include a first pair of differential signal lines configured to carry data signals between network devices and a second pair of differential signal lines configured to carry other data signals between the network devices; and wherein the signal generator, when providing the test signal, is configured to apply a DC voltage across the first and second pairs of differential signal lines.
28. (New) The apparatus of claim 27 wherein the signal generator is configured to couple between a centertap of the first pair of differential signal lines and a centertap of the second pair of differential signal lines.
29. (New) The apparatus of claim 27 wherein the signal generator is further configured to provide remote power to the computer network through the first and second pairs of differential signal lines to remotely power a device.

30. (New) An apparatus for discovering a powerability condition of a computer network, comprising:
- a signal generator configured to provide a test signal to differential signal lines of a connecting medium of the computer network; and
  - means for measuring a response signal from the differential signal lines of the connecting medium of the computer network to enable the apparatus to indicate whether a remotely powerable device connects to the connecting medium of the computer network based on the response signal;
- wherein the signal generator, when providing the test signal, is configured to supply to the connecting medium, (i) a first voltage during a first time period, and (ii) a second voltage that is substantially different than the first voltage during a second time period; and
- wherein the signal generator is configured to apply one of a positive and negative test voltage to the connecting medium as the first voltage, and the other of the positive and negative test voltage to the connecting medium as the second voltage.
31. (New) The apparatus of claim 30 wherein the computer network supports connection of a remotely powerable device that receives, during normal operation, an operating voltage having a first voltage magnitude; and wherein the signal generator is configured to supply, as the test signal, a test voltage having a second voltage magnitude that is substantially less than the first voltage magnitude.

32. (New) The apparatus of claim 30 wherein the connecting medium includes a local end and a remote end, and wherein operation of the apparatus selectively identifies, through the local end of the connecting medium, one of (i) a backwards wired device condition at the remote end, (ii) an open condition at the remote end, (iii) a remotely powerable device condition at the remote end, and (iv) a shorted/non-powerable device condition at the remote end.
33. (New) The apparatus of claim 30 wherein the differential signal lines of the connecting medium include a first pair of differential signal lines configured to carry data signals between network devices and a second pair of differential signal lines configured to carry other data signals between the network devices; and wherein the signal generator, when providing the test signal, is configured to apply a DC voltage across the first and second pairs of differential signal lines.
34. (New) The apparatus of claim 33 wherein the signal generator is configured to couple between a centertap of the first pair of differential signal lines and a centertap of the second pair of differential signal lines.
35. (New) The apparatus of claim 33 wherein the signal generator is further configured to provide remote power to the computer network through the first and second pairs of differential signal lines to remotely power a device.

36. (New) An apparatus for discovering a powerability condition of a computer network, comprising:
- a signal generator configured to couple to a controller; and
  - a detector configured to couple to the controller;
- wherein the signal generator is configured by the controller to provide a test signal to differential signal lines of a connecting medium of the computer network, and wherein the detector is configured by the controller to measure a response signal from the differential signal lines of the connecting medium of the computer network, in order to enable the controller to indicate whether a remotely powerable device connects to the connecting medium of the computer network based on the response signal;
- wherein the signal generator, when configured by the controller to provide the test signal, supplies to the connecting medium, (i) a first voltage during a first time period, and (ii) a second voltage that is substantially different than the first voltage during a second time period; and
- wherein the signal generator is configured to apply one of a positive and negative test voltage to the connecting medium as the first voltage, and the other of the positive and negative test voltage to the connecting medium as the second voltage.

37. (New) An apparatus for discovering a powerability condition of a computer network, comprising:
- a signal generator;
  - a detector; and
  - a controller including first control means for configuring the signal generator to provide a test signal to differential signal lines of a connecting medium of the computer network, second control means for configuring the detector to measure a response signal from the differential signal lines of the connecting medium of the computer network, and indication means for indicating whether a remotely powerable device connects to the connecting medium of the computer network based on the response signal;
- wherein the first control means includes means for directing the signal generator to supply to the connecting medium, (i) a first voltage during a first time period, and (ii) a second voltage that is substantially different than the first voltage during a second time period, the signal generator applying one of a positive and negative test voltage to the connecting medium as the first voltage, and the other of the positive and negative test voltage to the connecting medium as the second voltage.